



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,601	12/17/2001	Nobuyuki Takahashi	001425-120	4754

7590 04/05/2005
Platon N. Mandros
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

FOX, CHARLES A

ART UNIT	PAPER NUMBER
----------	--------------

3652

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/015,601	Applicant(s) TAKAHASHI, NOBUYUKI	
	Examiner Charles A. Fox	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 25, 2005 has been entered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the carry lines ending at a first side of the device must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Art Unit: 3652

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because:

Figure 1 and Figure 8 is not properly spelled;

Figures 9 and 10 should be labeled as prior art;

Figures 6 and 8 have multiple distinct figures in each, they should be labeled individually as 6a,6b and so forth. The brief description of the drawings and the specification should be changed to reflect any changes made to the drawings.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no disclosure of a second outward carry line that is distinct from the first outward carry line. There also are no drawings showing how a second outward carry line would be placed into the instant invention.

Claims 1 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no disclosure of the carry lines extending to a first side of the instant invention, rather all carry lines end in either an intermediate chamber (7) or the inversion chamber (8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al. in view of Saiki. In regards to claims 1-3 Aruga et al. US 6,027,618 teaches an in-line process system comprising:

a plurality of vacuum process chambers (2) which are longitudinally provided and hermetically connected to each other by gate valves (21);

a substrate carry system passing through said chamber comprising:

an outward carry line that extends from a first position to an inversion position within said device;

a return carry line which runs from said inversion device to a second position;

wherein said first and second positions are on a first side of said device. Aruga et al. do not teach placing more than one outward or return carry line in their device. Saiki US 5,376,212 teaches a process system with carry lines for substrates wherein there are provided at least two branched carry lines with two outward lines and two return line that are all parallel.

It would have been obvious to one of ordinary skill in the art, at the time of invention to provide the system taught by Aruga et al. with multiple conveying paths as taught by Saiki in order to maximize the output of the process facility by always having a substrate available for processing on one of the carry lines.

In regards to claims 6-8 Aruga et al. further teach that said carry line further comprises:

- a substrate carrier (3) that carries two substrates at substantially an angle of 90° to the horizontal;

- a horizontal movement mechanism that moves said carrier along a transfer path (30) through a plurality of vacuum chambers (2) that are located on the perimeter of said device.

In regards to claims 9 and 10 Aruga et al. further teach that said horizontal movement mechanism moves the substrate carriers (3) in a first horizontal direction longitudinal to said system and also in a horizontal direction perpendicular to said first horizontal direction, such that the substrate always faces to the side in relation to the direction of travel.

Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Saiki. In regards to claim 11 Takahashi et al. US 4,643,629 teaches a system for processing substrates comprising:

- a load lock chamber (3) for loading and unloading wafer to and from the system;
- a plurality of vacuum process chambers (5,6) longitudinally provided and hermetically connected to each other;

an intermediate chamber (4) arranged between the load lock and the process chambers;

a substrate carry system which passes through all of said chambers comprising:

an outwards carry line extending from a first position to an inversion position;

a return carry line extending from said inversion position to a second position. Takahashi et al. do not teach the system as having a branch line with a plurality of outward or return carry lines. Saiki teaches a process system with carry lines for substrates wherein there are provided branched carry lines with two outward lines and two return line that are all parallel.

It would have been obvious to one of ordinary skill in the art, at the time of invention to provide the system taught by Takahashi et al. with multiple conveying paths as taught by Saiki in order to maximize the output of the process facility by always having a substrate available for processing on one of the carry lines.

In regards to claims 12 and 13 Takahashi et al. also teach the outward and return lines are parallel and pass through a common vacuum chamber.

In regards to claim 14 Takahashi et al. further teach a cooling station (9) placed on the travel path of a substrate being processed.

In regards to claim 15 Takahashi et al. further teach an inversion chamber (6) at the end of the device opposite the load lock chamber (3) and that substrates are moved from the outward carry line to the return carry line by an inversion device.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al in view of Saiki as applied to claim 1 above, and further in view of Takahashi et al. Aruga et al in view of Saiki teach the limitations of claim 1 as above, Aruga et al. further teach heating the substrates as they move along the carry lines, they do not teach the carry lines as being in the same vacuum chamber. Takahashi et al. teaches a process device with an outward and a return carry line that pass through a plurality of common vacuum chambers. It would have been obvious to one of ordinary skill in the art, at the time of invention to provide the device taught by Aruga et al in view of Saiki with carry lines as taught by Takahashi et al. in order to decrease the footprint of the device leading to a greater density of process equipment in the clean area.

Response to Amendment

The amendments to the claims filed on December 27, 2004 have been entered into the record.

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A. Fox whose telephone number is 571-272-6923. The examiner can normally be reached between 7:00-4:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached at 571-272-6607. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

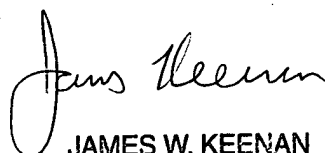
Art Unit: 3652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CAF

CAF

3-21-05



JAMES W. KEENAN
PRIMARY EXAMINER